COMMENTS AND ARGUMENTS

Drawing Objection

The drawings were objected under 37 CFR § 1.83(a) as failing to show "every feature of the invention specified in the claims." Specifically, the drawings are objected to as failing to show the "two sets of ribs extending at angles relative to each other" of claim 4. It is stated that the drawings must be amended or the subject matter be deleted from the claims.

In the specification, the ribbing structure of the upper retainer is described on page 3, line 25 to page 4, line 12. The specification describes two different types of ribs that provide reinforcement: ribs 17 and ribs 20. Both sets of ribs are illustrated in the original figures: Fig. 2 shows ribs 17 and one rib 20; Fig. 6 clearly shows both types, ribs 17 and 20, and shows them at an angle relative to each other. As both types of ribs are clearly illustrated, and illustrated in such a manner as to enable one in the art to understand the invention, withdraw of this objection is respectfully requested.

If the examiner does not believe that Figure 6 sufficiently illustrates "two sets of ribs extending at angles relative to each other," a proposed solution or a detailed explanation of why Figure 6 is insufficient is requested.

35 U.S.C. § 112, second paragraph

Claim 1 stands rejected under 35 U.S.C. § 112, second paragraph, for being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The language "intermediate ribbed reinforcement structure" is considered to be vague. By "intermediate," Applicant is indicating that the portion of the retainer being recited in the claim is neither the uppermost or lowermost portion of the retainer, but the central portion of the retainer. The intermediate portion of the retainer is provided with ribs; the ribs providing reinforcement, or strength, to the retainer to allow for direct mounting of the air spring. Since there is no indication of why the recited phrase is "vague," it is hoped that this explanation clearly explains the concise recited language, and Applicant respectfully requests the withdraw of this rejection.

35 U.S.C. § 102(b)

Claims 1-4 and 7-8 have been rejected under 35 U.S.C. 102(b) as being anticipated by Heider et al. (US 4,733,876). This rejection is traversed for the reasons set forth below.

Heider discloses an air spring that is used in combination with a partial leaf spring. The airspring is comprised of an air sleeve secured at each end, at one end the air sleeve is crimped to an upper retainer and at the opposing end the air sleeve is secured between a retainer and a piston. The upper retainer may be viewed as being constructed of two associated plates, wherein the plate located outside of the air chamber formed by the air spring is bolted to the crimping plate. The outer plate has a ribbed structure for mounting the air spring to the vehicle frame.

The air spring of Heider does not have the instantly claimed structure for several reasons. First, if it is the upper structure of retainer 34 that is considered to be the "ribbed reinforcement structure" of Heider, than it is contrary to the instantly recited "intermediate ribbed reinforcement structure." The ribbed structure of retainer 34 of Heider is the axially outermost structure, not the intermediate structure of the entire retainer.

Secondly, one skilled in the art would readily recognize that the top plate of the structure 34, as identified by Heider, is actually not part of the air spring retainer, but a separate plate secured to the retainer for the purpose of mounting the air spring to the frame, i.e. a mounting plate as discussed in Applicants prior art discussion, thus there is no direct mounting capability of the air spring due to the retainer structure as recited.

In regard to claim 3, Heider fails to show an intermediate ribbed structure wherein the ribs extend the full length of the retainer, as claimed.

In regard to claim 4, Heider also fails to show an intermediate ribbed structure comprising two sets of the ribs extending at angles relative to each other, as instantly claimed.

In regard to claim 8, Heider fails to disclose the intermediate ribbed structure as having an outer plate and an inner plate, wherein the ribs extend between these two plates.

It is respectfully requested that the rejection of the claims as being anticipated by Heider et al be withdrawn.

35 U.S.C. § 103(a)

Claims 5-6 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Heider et al. (US 4,733,876) in view of Koschinat et al. This rejection is respectfully traversed for the reasons set forth below.

As discussed above, Heider fails to teach or disclose all of the elements of the claimed retainer plate invention. Koschinat fails to remedy the deficiency of Heider as the teachings of Koschinat are directed to a preferred structure for the piston.

Since claims 5 and 6 are dependent upon claim 1, and claim 1 is neither anticipated nor rendered obvious by the applied prior art, claims 5 and 6 also fail to be anticipated or rendered obvious.

It is respectfully requested that the rejection of the claims as being obvious over Heider et al. in view of Koschinat be withdrawn.

Prior Art Made of Record

Several patents were considered to be pertinent to Applicant's disclosure and were made of record. While not obligated to comment upon these patents, for expediency, Applicant has chosen to note the differences between the air springs of these patents and the claimed invention.

Safreed discloses an air spring in which an air sleeve is secured at opposing ends to an upper retainer and a piston. While the piston has a series of radially extending ribs to strengthen the piston, the retainer has a flat, non-ribbed structure, contrary to that recited by Applicant which is defined by an intermediate ribbed structure.

The ribbed structure disclosed by Hofacre is the compression bumper located within the air spring, not the upper retainer wherein the ribs provide reinforcement to permit direct mounting of the airspring.

Koeske discloses an air spring mounted on a ribbed spacer element 10. The air spring is directly mounted on the spacer, and may be considered to be attached to the piston, with the spacer providing the connection between the air spring and the mounting surface of the vehicle. The spacer is not a retainer as recited, nor does it secure an air sleeve end to assist the sleeve in forming a fluid chamber as recited.

Levy discloses an air spring with a retainer, a piston, and an air sleeve secured at each end to the retainer and the piston, respectively. The retainer has a predominately flat, non-ribbed structure – the only defining element of the retainer is the crimp about the upper bead of the air sleeve. Similar to Safreed, the ribbed structure is the piston, not the retainer as recited by Applicant.

All of these patents disclose ribbing of some element of the air spring – whether in the bumper, the piston, or a separate spacer. None disclose ribbing in the retainer, nor do they suggest mimicking the ribbing in another part of the air spring to permit direct mounting of the air spring.

In light of the arguments set forth, Applicant believes the claims now pending in the subject patent application are in condition for allowance. The Examiner is respectfully requested to indicate allowability of all the pending claims.

Respectfully submitted,

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